

IN THE CLAIMS:

Cancel claims 1-23. Insert new claims 24-56.

24. (New) A method of removing fruit from a plant, comprising connecting drive means to the plant to apply vibrations thereto, wherein the vibrations have an amplitude and/or frequency and/or phase which varies with time.

25. (New) A method according to claim 24, wherein the vibrations are substantially unidirectional.

26. (New) A method according to claim 24, wherein the vibrations are applied to the plant substantially normally to the longitudinal axis of the plant.

27. (New) A method according to claim 24, wherein one or more sensors measures the acceleration and/or displacement of the vibrations.

28. (New) A method according to claim 27, further comprising the step of adjusting the frequency and/or phase and/or amplitude of the vibrations in dependence on the sensor information.

29. (New) A method according to claim 24, wherein the amplitude and/or frequency and/or phase of the vibrations is adjustable manually.

30. (New) A method according to claim 24, further comprising the step of sweeping the frequency of the vibrations linearly or non-linearly, from an initial sweep frequency to a final sweep frequency.

31. (New) A method according to claim 30, wherein the initial sweep frequency is higher than the final sweep frequency.

32. (New) A method according to claim 30, wherein the initial sweep frequency is lower than the final sweep frequency.

33. (New) A method according to claim 30, wherein the vibrations include a modulation component which has a much lower frequency than the sweep frequency.

34. (New) A method according to claim 24, further comprising the step of limiting the range of frequencies of the vibrations by means of a band pass filter.

35. (New) A method according to claim 34, further comprising the step of omitting frequencies from the vibrations which cause leaf detachment from the tree.

36. (New) A device for removing fruit from a plant comprising:
a vibratory head having means for clamping a fruit plant to apply vibrations to the plant, and means for controlling the vibratory head,
the vibratory head further comprising at least one reaction mass which is vibratably driveable and connected to the clamping means for relative movement therebetween to provide a unidirectional force transmittable between the reaction mass and the clamping means, and hence transmittable to the plant, wherein the vibrations have an amplitude and/or frequency and/or phase which varies with time.

37. (New) A device according to claim 36, wherein the control means comprise electronic control means for controlling the amplitude and/or frequency and/or phase of the vibrations.

38. (New) A device according to claim 36, wherein the or each reaction mass comprises a hydraulic cylinder and/or piston.

39. (New) A device according to claim 38, wherein the hydraulic piston and cylinder are driven by pressurised fluid which is selectively applied to chambers of the hydraulic cylinder by a valve.

40. (New) A device according to claim 38, wherein the reaction mass comprises a piston.

41. (New) A device according to claim 38, wherein the reaction mass comprises a cylinder.

42. (New) A device according to claim 38, wherein the drive means has two cylinders and two pistons.

43. (New) A device according to claim 38, wherein the drive means has more than two pistons and cylinders arranged orthogonally to one another for placement around the trunk or branch and driveable sequentially.

44. (New) A device according to claim 36, wherein the vibrations of the or each reaction mass are substantially unidirectional.

45. (New) A device according to claim 36, wherein the vibratory force is applied to the plant substantially normally to the longitudinal axis of the plant.

46. (New) A device according to claim 36, further comprising sensors for measuring the acceleration and/or velocity and/or displacement of the vibrations.

47. (New) A device according to claim 46, wherein the frequency and/or phase and/or amplitude of the vibrations of the reaction mass are adjustable in dependence on the sensor information.

48. (New) A device according to claim 36, wherein the control means are manually adjustable.

49. (New) A device according to claim 36, wherein the frequency of the vibrations is swept linearly or non-linearly from an initial sweep frequency to a final sweep frequency.

50. (New) A device according to claim 49, wherein the initial sweep frequency is higher than the final sweep frequency.

51. (New) A device according to claim 49, wherein the initial sweep frequency is lower than the final sweep frequency.

52. (New) A device according to claim 36, wherein the vibrations include a modulation component which has a much lower frequency than the sweep frequency.

53. (New) A device according to claim 36, wherein the frequency range is limited by a band pass filter.

54. (New) A device according to claim 36, wherein frequencies which cause leaf detachment from the tree are substantially omitted from the vibrations.

55. (New) A device according to claim 38, wherein the vibratory head is mounted on carrying means with respect to which the vibratory head is independently movable.

56. (New) A device according to claim 38, wherein the drive means utilises electromagnetic or pneumatic force to oscillate the reaction mass.